

RECENSION OF THE *ASPLUNDIANTHUS* GROUP OF
EUPATORIUM, s.l.

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ABSTRACT

A taxonomic treatment of the Andean genus *Asplundianthus* King & H. Robins. is rendered. Seven species are recognized in the complex. Brief descriptions, complete synonymy, a key to species, and maps showing distribution are presented.

KEY WORDS: Asteraceae, Eupatorieae, *Eupatorium*, *Asplundianthus*.

King & Robinson (Monographs Syst. Bot., Missouri Bot. Gard. 22:346-348. 1987.) recognized ten species in their segregate genus *Asplundianthus*, all of these restricted to relatively high elevations (2500-3000 m) of the Andean regions of Colombia, Ecuador, and Perú. The present treatment recognizes seven species, all of these having been previously treated within *Eupatorium*, s.l., by yet other workers. Two recently described species, *Asplundianthus pseudostuebelii* King & H. Robins. and *A. sagasteguii* King & H. Robins., are treated as synonyms of the widespread *Eupatorium stuebelii* Hieron.

In their treatment of the tribe Eupatorieae, King & Robinson erected the genus *Asplundianthus* to accommodate a group of montane Andean shrubs or clambering vines with mostly deciduous involucre bracts and slender stylar appendages.

Asplundianthus was positioned within the subtribe Critoniinae between *Aristeguietia* King & H. Robins. and *Austrocritonia* King & H. Robins. It is distinguished from the former by its narrow style branches and from the latter by its rather evenly barbellate pappus bristles (vs. bristles barbellate below but smooth and tapered apically). In its total characters, however, it appears to stand somewhat closer to *Austrocritonia*, especially if stylar characters are emphasized.

KEY TO THE *ASPLUNDIANTHUS* GROUP OF *EUPATORIUM*

1. Leaves sessile; Colombia. *E. densum*
- 1' Leaves with petioles 2-30 mm long. (2)
2. Leaves mostly 2-4 cm long; Colombia. *E. arcuans*
- 2' Leaves mostly 4-10 cm long. (3)
3. Leaves pinnately nervate, glabrous beneath; petioles mostly 2-8 mm long; Colombia. *E. toroi*
- 3' Leaves trinervate to subpinnately nervate, variously pubescent to glabrous beneath; petioles mostly 6-30 mm long. (4)
4. Heads arranged in closely clustered ovoid corymbs; florets 4-7 per head; leaves subglabrous, pubescent mainly along the veins; Ecuador. *E. pseudoglomeratum*
- 4' Heads arranged in cymose panicles, if in ovoid corymbs then the branches which bear them widely divaricate; florets 7-10 per head; leaves glabrous to densely pubescent. (5)
5. Leaves glabrous or nearly so; blades trinervate from or near the base; Colombia, northern Ecuador, Venezuela. *E. smilacinum*
- 5' Leaves variously pubescent; blades trinervate from above the base, or else subpinnately nervate. (6)
6. Leaves scabridulous beneath, harsh to the touch; Perú (Dept. Huanuco). *E. trachyphyllum*
- 6' Leaves with appressed or matted hairs beneath, soft to the touch; Colombia, Ecuador, Perú. *E. stuebelii*

Eupatorium arcuans B.L. Robins.

Eupatorium arcuans B.L. Robins., Proc. Amer. Acad. Arts 54:237. 1918.
Asplundianthus arcuans (B.L. Robins.) King & H. Robins., Phytologia 30:224. 1975. TYPE: COLOMBIA. Andean range near Bogotá, 2600 m, 1851-57, *J. Triana 1191* (HOLOTYPE: K; Photoholotype: GH!; Isotypes: GH!, fragment NY!; Photoisotypes: LL!, MO!).

Eupatorium gongorae Cuatr., Trab. Mus. Madrid Bot. 29:17. 1935.
 TYPE: COLOMBIA. Vieja: "Quebrada de la Cuatrecasas," without date, *Cuatrecasas 2937* (HOLOTYPE: MA; Photoholotype: MO!)

Shrubs with very leafy, arcuate branching, 2-3 m high. Stems densely rusty tomentose to nearly glabrate. Leaves mostly 1.5-3.5 cm long, 1.0-1.5 cm wide; petioles 3-6 mm long; blades ovate, trinervate, sparsely pubescent only along the major veins beneath, the upper surfaces smooth and seemingly somewhat viscid, the margins serrate. Heads 10-50, arranged in rounded terminal cymes, the ultimate peduncles 0-2 mm long. Involucres mostly 5-7 mm high, the bracts 16-18, 3-4 seriate, graduate, glabrous. Florets 10-12 per head, the corollas glabrous, ca. 4.5 mm long, the limb ca. 2 mm long. Achenes ca. 2.5 mm long, glabrous or a few hispid hairs near apices, the pappus of 40-50 moderately barbellate white bristles ca. 4.5 mm long, the apices slender.

DISTRIBUTION (Fig. 1): Known only from the vicinity of Medellín and Bogotá, Colombia, in Páramo vegetation, 2800-3000 m; July-August.

REPRESENTATIVE SPECIMENS: COLOMBIA. Antioquia: vicinity of Medellín, 20 Aug 1927, *Toro 470* (NY). Boyaca: Páramo de la Rusia, Boyaca, 10,000 ft, 12 Jul 1968, *Barkley 38C129* (TEX). Cundinamarca: Guadalupe, near Bogotá, without date, *Bro. Ariste-Joseph A250* (GH); Boquerón, 2850 m, 30 Jan 1925, *A. Schultze 118* (GH). N. Grenada, without specific locality or date, *Linden 16* (MO, NY).

According to label data (*Barkley 38C129*), the plant is a "tree of 3 meters with lavender flowers."

Eupatorium densum Benth.

Eupatorium densum Benth., *Pl. Hartw.* 200. 1845. *Asplundianthus densus* (Benth.) King & H. Robins. *Phytologia* 30:225. 1975. TYPE: COLOMBIA. Cundinamarca: near Bogotá, without date, *Hartweg 1105* (HOLOTYPE: K; Photoholotype: GH!, NY!; Isotype: NY!; Sketch of isotype: GH!; Photoisotype: MO!).

Erect smooth shrub to 2 m high. Stems sparsely puberulent to glabrate. Leaves sessile, ovate-lanceolate, mostly 6-10 cm long, 1.5-2.5 mm wide, pinnately veined, glabrous or nearly so, the margins entire. Heads sessile and numerous in closely packed terminal corymbose panicles. Involucres 4-5 mm high, the bracts ca. 18, 3-4 seriate. Florets 5-8 per head, the corollas glabrous, ca. 3 mm long, the weakly differentiated limb ca. 1.7 mm long. Achenes ca. 2 mm long, glabrous, the pappus of 30-40 weakly barbellate bristles 2-3 mm long, the apices slender.

DISTRIBUTION (Fig. 1): Known only from the vicinity of Bogotá, Colombia at about 2700 m; May-July.

SPECIMENS EXAMINED: COLOMBIA. Cundinamarca: Slopes of Salto de Tequendama, 6 Jul 1929, *Chardon 649* (GH); "Prov. de Bogotá," 2650 m, May-Jul 1855, *Triana 1230* (also number 55), NY, F (fragment from P).



Fig. 1. Distribution of *Asplundianthus* species.

Vegetatively this species is superficially similar to the poorly known *Eupatorium toroi* B.L. Robins., but lacks the petiolate, glandular punctate, leaves of the latter.

Eupatorium pseudoglomeratum Hieron. ex Sod.

Eupatorium pseudoglomeratum Hieron. ex Sod., Bot. Jahrb. Syst. 29:8. 1900.
Asplundianthus pseudoglomeratus (Hieron. ex Sod.) King & H. Robins. Phytologia 30:225. 1975. TYPE: ECUADOR. without locality, 1897, Sodiro 6/2 (Lectotype fragment and Photolectotype: [B], GH!). Three collections of Sodiro were cited in the protologue (6/2, 6/4, 6/10); collection 6/2 is selected here as the lectotype.

Weak stemmed nearly glabrate suffruticose herbs or shrubs to 2 m high. Stems puberulent, glabrate with age. Leaves mostly 4-14 cm long, 2-5 cm wide; petioles 0.8-3.0 cm long; blades ovate deltoid to ovate, trinervate from or near the base, glabrous above, puberulo-hispid beneath, the margins serrate. Heads numerous, arranged in clusters of terminal globose corymbs, the ultimate peduncles 0-1 mm long. Involucres 5-6 mm high, the bracts 12-16, 3-5 seriate, glabrous. Florets 4-7 per head, the corollas ca. 3.5 mm long, the weakly differentiated limb ca. 1.5 mm long. Achenes ca. 2 mm long, glabrous, the pappus of 40-50 sparsely barbellate bristles ca. 3 mm long.

DISTRIBUTION (Fig. 1): Known only from Colombia (?) and Ecuador, Prov. Pichincha, 2800-3000 m; January-March.

REPRESENTATIVE SPECIMENS: ECUADOR. Pichincha: ca. 3 km SW Chillogallo, ca. 10,800 ft, 17 Jan 1974, King 6510 (F); ca. 10 km W of Quito, ca. 10,000 ft, 7 Feb 1974, King 6732 (MO). Yunguillo, 2800-3000 m, 14 Mar 1987, Zak 1830 (F, MO, NY); "about Tambillo, Pifo," etc., 2000-3000 m, without date, Mille 540 (GH, MO, NY).

COLOMBIA (?): Ocana: "in cours des maisons," 3500 m, Nov 1851, Schlim 331 (F).

Eupatorium smilacinum H.B.K.

Eupatorium smilacinum H.B.K., Nov. Gen. & Sp. 4:87. 1818. [ed. folio] *Asplundianthus smilacinus* (H.B.K.) King & H. Robins. Phytologia 30:225. 1975. TYPE: COLOMBIA. Tolima: Quindio Mountains, near Alto de Guayabal & Quebrada de Toche, 1280-1830 m, without date, Humboldt & Bonpland s.n. (HOLOTYPE: P; Photoholotype: GH!, LL!, MO!).

Clambering nearly glabrous shrubs. Stems puberulent, glabrate with age. Leaves mostly 5-12 cm long, 2-5 cm wide; petioles 6-30 mm long; blades ovate

to ovate-elliptic, glabrous above and below, trinervate from or near the base, the margins dentate, sometimes coarsely so. Heads sessile and numerous, arranged in rounded corymbs, these in turn arranged in widely or divaricately branched corymbose panicles. Involucres 4-6 mm high, the bracts ca. 16, graduate, 3-4 seriate, glabrous. Disk florets 6-8 per head, the corollas glabrous, 4-5 mm long, the limb weakly defined, ca. 2 mm long. Achenes ca. 2 mm long, glabrous except for a few hispid hairs near the apex, the pappus of ca. 40-50 white sparsely barbellate bristles 4-5 mm long.

DISTRIBUTION (Fig. 1): Venezuela, Colombia, and Ecuador, montane rain forests and shrub zone (paramillo), 2100-3000 m; February-June (August).

SPECIMENS EXAMINED: ECUADOR. Napo-Pastaza: Coyuja, ca. 57 km ESE of Quito, ca. 2900 m, 21 May 1947, *Fosberg 27542* (MO).

COLOMBIA. Cauca: Moscopan, 2600 m, Mar 1943, *Kjell von Sneidern 4311* (LL); Moscopan, 2000 m, Aug 1944, *Kjell von Sneidern 4684* (LL); Mount El Trueno, 2700-3000 m, 29-30 Jun 1972, *Pennell 7519* (GH). Tolima (Quindio): Moral en el Quindio, 2100 m, Feb 1854, *Triana 1192* (GH).

VENEZUELA. Tachira: Slopes along Quebrada Agua Azul, 14 km SE of Las Delicias, 2150-2300 m, 22-23 Jul 1979, *Steyermark & Leisner 118279* (MO).

This taxon superficially resembles *Eupatorium arcuans* B.L. Robins., the latter having smaller, pubescent leaves, and capitulescences not divaricately branched.

Eupatorium stuebelii Hieron.

Eupatorium stuebelii Hieron., Bot. Jahrb. Syst. 21:329. 1895. *Asplundianthus stuebelii* (Hieron.) King & H. Robins. Phytologia 30:226. 1975. TYPE: ECUADOR. "Campamento Utanag, Valle del Río Chambo," 3045 m, Nov 1872, *A. Stuebel 272* (Lectotype: B, destroyed?; Photolecotype: GH!, MO!, NY!). Two collections were cited in the protologue, *Stuebel 164* [from Colombia] and *Stuebel 272* [from Ecuador]; by annotation on the latter, Hieronymus clearly denoted the type intended and this was formalized by King & Robinson in their transfer of the species to *Asplundianthus*, where they lectotypified *E. stuebelii* with *Stuebel 272*).

Asplundianthus pseudostuebelii King & H. Robins. Phytologia 30:225. 1975. TYPE: COLOMBIA. Cundinamarca: ca. 15 km NNW Facativa, ca. 2330 m, 14 Jul 1965, *R.M. King, et al. 5923* (HOLOTYPE: US; Isotype: NY!).

Asplundianthus sagasteguii King & H. Robins. Phytologia 39:137. 1978. TYPE: PERÚ. Piura: Canchaque-Minas Turmalina, 2250 m, 23 Jul 1975, *Sagastegui, et al. 8273* (HOLOTYPE: US; Isotypes: F!, MO!, NY!).

Shrub or clambering vine. Stems densely tawny puberulous or sordid tomentulose. Leaves mostly 6-15 cm long, 2.5-6.0 cm wide; petioles 1-3 cm long; blades broadly ovate, trinervate from or somewhat above the base, rarely penninervate, the upper surfaces rugose and glabrate to moderately pubescent with appressed hairs, the undersurfaces pubescent with appressed hairs or densely puberulent to pilose, the margins finely crenulate to nearly entire. Heads numerous in broad rounded cymose panicles, the latter 10-25 cm across, 5-15 cm high, the ultimate peduncles mostly 0-3 mm long. Involucres 6-7 mm high, the bracts ca. 16, 3-5 seriate, graduate. Florets ca. 10 per head, the corollas glabrous, 5-6 mm long, the limb poorly differentiated, ca. 2.5 mm long. Achenes 2-3 mm long, sparsely hispidulous, atomiferous glandular, or both, rarely glabrous throughout, the pappus of 40-50 white barbellate bristles ca. 5 mm long, the apices slender.

DISTRIBUTION (Fig. 1): Colombia, Ecuador, and northern Perú, 2500-3200 m; June-September.

The name *Asplundianthus pseudostuebelii* has been applied to forms from Colombia with longer, more slender-tapering blades than is usually found. *Asplundianthus sagasteguii* is said to differ from *A. stuebelii* (Hieron.) King & H. Robins. by the "minute dense almost hyphal blackish tomentum of the leaf undersurfaces," but this is not apparent in an isotype (F); indeed, I can find no characters to distinguish material from northernmost Perú from that of Ecuador and Colombia.

REPRESENTATIVE SPECIMENS: COLOMBIA. Caldas: Salento to "Laguneta," Old Quindio Trail, 2500-3100 m, 1 Aug 1922, *Killip & Hazen 9106, 9140* (GH); "Pinares," above Salento, 2600-2900 m, 2-10 Aug 1922, *Pennell 9207, 9208* (GH, NY). Cundinamarca: sabana de Bogotá, hills of Chapinero, Jun 1923, *Pring 201* (MO). Cauca: "Calaguala," Conuco, 2500-2800 m, 14-18 Jun 1922, *Pennell 7180* (GH); "San Jose," San Antonio, 2100-2300 m, 1 Jul 1922, *Pennell 7650* (GH). Valle: Mpio. Tulua, Corr. Santa Lucia, finca San Luis, 7800 m, 22 Sep 1984, *Devia A. 716* (MO).

ECUADOR. Cañar: vicinity of Azogues, 16-17 Sep 1918, *Rose 22787* (GH, NY). Chimborazo: near Pimo, 9 Jul 1945, *Camp E-4122* (MO, NY). Pichincha: "Andes of Quito," 9000 ft, 1848, *Jameson 617* (fragment, GH); 8 km W of Aloag, 3030 m, 22 Jul 1977, *Stuessy & Jansen 4888* (TEX). Tungurahua: Cusatagua, near Ambato, Mar 1919, *Pachano 195* (GH).

PERÚ. Amazonas: Chachapoyas, 5 Mar 1901, *Mathews s.n.* (GH). Lambayeque: between Huaratara and Colaya, 2000 m, 5 Jul 1986, *Quiroz 1980* (F). Piura: Cuella del Indio (road to Huancubamba), 2800 m, 13 Sep 1981, *Lopez M. 8874* (F, MO).

Eupatorium toroi B.L. Robins.

Eupatorium toroi B.L. Robins., Contr. Gray Herb. 104:28. 1934. *Asplundianthus toroi* (B.L. Robins.) King & H. Robins., Phytologia 30:226. 1975. TYPE: COLOMBIA. Antioquia: Titiribi, ca. 50 km from Medellín, 30 Jun 1928, *Rafael A. Toro 1201* (HOLOTYPE: NY!; Fragment holotype: GH!).

Clambering shrubs. Stems densely puberulent to subglabrate. Leaves ovate elliptic to ovate lanceolate, mostly 5-10 cm long, 1.8-4.0 cm wide, pinnately veined, glabrous throughout, somewhat glandular punctate beneath, the margins entire; petioles 3-10 mm long. Heads sessile and numerous in closely packed corymbose panicles. Involucres 5-6 mm high, the bracts ca. 16, 3-4 seriate. Florets 4-6 per head, the corollas glabrous, ca. 4 mm long, reportedly "pale yellow," the limb weakly differentiated, ca. 2.2 mm long. Achenes ca. 2 mm long, sparsely hispidulous apically, the pappus of 30-40 bristles, the apices somewhat swollen and barbellate.

DISTRIBUTION (Fig. 1): north central Colombia, montane forests, ca. 1900 m; flowering May-June.

ADDITIONAL SPECIMEN EXAMINED. COLOMBIA: Antioquia: Mpio. Granada, road between San Carlos-Granada at km 24, 1900 m, 21 May 1988, *Zarucchi, et al. 6783* (MO).

Eupatorium trachyphyllum Hieron.

Eupatorium trachyphyllum Hieron., Bot. Jahrb. Syst. 36:467. 1905. *Asplundianthus trachyphyllus* (Hieron.) King & H. Robins., Phytologia 30:226. 1975. TYPE: PERÚ. Huanuco: Tambillo, *Jelski 697* (HOLOTYPE: B, destroyed?; Fragment type: GH!; Photoholotypes: GH!, TEX!; Isotype MO!).

Eupatorium scabrifolium B.L. Robins., Contr. Gray Herb., n.s. 77:36. 1926. *Asplundianthus scabrifolius* (B.L. Robins.) King & H. Robins., Phytologia 30:226. 1975. TYPE: PERÚ. Huanuco: Mito, 2745 m, 23 Jul-14 Aug 1922, *Macbride & Featherstone 1873* (HOLOTYPE: F; Photoholotypes: GH!, NY!, TEX!; Isotype GII!).

Clambering shrubs to 7 m high. Stems much branched above, densely rusty tomentulose at first but soon glabrate. Leaves 6-9 cm long, 1.5-4.0 cm wide; petioles ca. 1 cm long; blades ovate to narrowly lanceolate, subpinnately nervate, hispidulous to scabridulous, the surfaces reticulately nerved and between these many minute atomiferous glands, the margins entire or nearly so. Heads numerous in cymose panicles, the ultimate peduncles mostly 1-3 mm

long. Involucres 5-6 mm high, the bracts ca. 16, 3-4 seriate, graduate. Disk florets 5-9 per head, the corollas lilac, ca. 5 mm long, glabrous, the limb ca. 2.5 mm long. Achenes ca. 2.5 mm long, sparsely hispidulous, the pappus of 40-50 white barbellate bristles 4-5 mm long, the apices slender.

DISTRIBUTION (Fig. 1): Known only from Department of Huanuco, Perú, 1800-2800 m; May-August.

Other than the more linear lanceolate leaves of *Eupatorium scabrifolium* B.L. Robins., I can find little else to distinguish this from *E. trachyphyllum* Hieron., both occurring in the same general region. According to label data on the type of the latter, *E. trachyphyllum* is a liana up to 7 m long.

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